

# **INTERIM STATUS CLOSURE PLAN SOLID WASTE MANAGEMENT UNIT 63**

**U.S. DEPARTMENT OF ENERGY**

**Rocky Flats Plant  
Transuranic Mixed Wastes**

**CO7890010526**



**Rockwell International  
Aerospace Operations  
Rocky Flats Plant**

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# REGULATORY CHECKLIST FOR DRUM STORAGE AREA

6 CCR 1007-3	[40 CFR]	CLOSURE PLAN
PART/REQUIREMENT	[SECTION]	SECTION

<u>Closure Performance Standard</u>	
265.111	3.1

The owner or operator must close his facility in a manner that:

- a. Minimizes the need for further maintenance; and
- b. Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface water or to the atmosphere; and
- c. Complies with the closure requirements of this Subpart including, but not limited to the requirements of Sections 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381, and 265.404.

Detailed Description of Steps Necessary to Close the Storage Facility:  
265.112(b)1 [265.112(b)1]

3.2, 4.0 5.0,  
6.0, 7.0

Content of Plan. The plan must identify the steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include, at least:

1. A description of how each hazardous waste management unit at the facility will be closed in accordance with Section 265.111; and

**Identification of Maximum Extent of Operation of the Storage Facility:**

265.112(b)2

[265.112(b)2]

2.2

2. A description of how final closure of the facility will be conducted in accordance with Section 265.111. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility; and

**Removal and Management of Hazardous Wastes:**

**Estimate of Maximum Inventory of Hazardous Waste in the Storage Facility:**

265.112(b)3

[265.112(b)3]

2.2.2

3. An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the types(s) of the off-site hazardous waste management units to be used, if applicable; and

**Detailed Description of Removal of Hazardous Waste Inventory:**

265.112(b)3

[265.112(b)3]

4.0

265.114

[265.114]

4.0

When closure is completed, all facility equipment and structures must have been properly disposed of, or decontaminated by removing all hazardous waste and residues.

**Identification and Type of Off-site Hazardous Waste Management Unit(s):**

265.112(b)3

[265.112(b)3]

5.0

265.112(b)4

265.112(b)4

A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination necessary to satisfy the closure performance standard;

Detailed Description of Decontamination Steps:

265.112(b)4

[265.112(b)4]

6.0

Procedures for Cleaning Equipment and Structures and Removing Contaminated Soils, and Detailed Description of Decontamination:

265.112(b)4

[265.112(b)4]

6.0

265.114

[265.114]

A Detailed Description of Removal of Contaminated Equipment and Hazardous Waste

Residues:

265.112(b)4

[265.112(b)4]

6.3, 6.4, 6.6

265.114

[265.114]

Methods for Sampling and Testing to Demonstrate Success of Decontamination:

265.112(b)4

[265.112(b)4]

7.0

265.114

[265.114]

Detailed Closure Schedule:

265.112(b)6

[265.112(b)6]

8.0

A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included.);

Time Allowed for Closure:

265.113b

[265.113b]

8.0

The owner or operator must complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of wastes or 180 days after approval of the closure plan, if that is later. The Department may approve a longer closure period using the procedures under 265.112(c) if the owner or operator demonstrates that;

- 1.i. The closure activities will, of necessity, take him longer than 180 days to complete;
- ii.A. The facility has the capacity to receive additional waste;
- B. There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site;
- C. Closure of the facility would be incompatible with continued operation of the site; and
2. He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but inactive facility.



Certification of Closure:  
265.115

[265.115]

13.0

Certification of Closure. When closure is completed, the owner or operator must submit to the Department certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

Closure Cost Estimates, Financial Assurance and Liability Coverage:  
266.12

[265.142]

9.0

a. The owner or operator must prepare a written estimate, in current dollars, of the cost of closing the facility in accordance with the closure plan as specified in 264.112. The closure cost estimates must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.

b. During the operating life of the facility, the owner or operator must adjust annually the closure cost estimates. The adjustment must be made using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year. Adjustments to the cost estimates are made by multiplying the latest closure cost estimate by the latest inflation factor. Facilities using a financial mechanism other than the financial test or corporate guarantee should use the deflator published close to the anniversary date of the instrument. Facilities using the financial test or corporate guarantee should use the deflator published nearest the fiscal year end reporting date required by 266.14(i)5. The adjust closure cost (ACC) estimate is calculated as follows:

6 CCR 1007-3

PART/REQUIREMENT

[40 CFR]

[SECTION]

CLOSURE PLAN  
SECTION

ACC=CCC x IF

ACC= Adjusted closure cost,

CCC= Current closure cost estimate as determined in paragraph (a) above.

IF = Inflation factor = LPD/PYD

LPD= Latest published Deflator

PYD= Previous year's Deflator

- c. The owner or operator must revise the closure cost estimate whenever a change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in 266.12(b)

- d. The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with 255.12(a) and (c) and, when this estimate has been adjusted in accordance with 266.23(b), the latest adjusted closure cost estimate.

x

**INTERIM STATUS CLOSURE PLAN FOR  
SOLID WASTE MANAGEMENT UNIT NO. 63  
BUILDING 371, ROOM 3420**

**1.0 INTRODUCTION**

**1.1 Plant Location and Mission**

The U.S. Department of Energy's Rocky Flats Plant is located in north-central Colorado, northwest of the City of Denver (Figure 1). The plant is located in Sections 1 through 4 and 9 through 15 of T 1 S, R. 70 W. The facility's EPA identification number is CO 7890010526. The mailing address is

U.S. Department of Energy  
Rocky Flats Plant  
P.O. Box 928  
Golden, CO 80402

The facility contact is

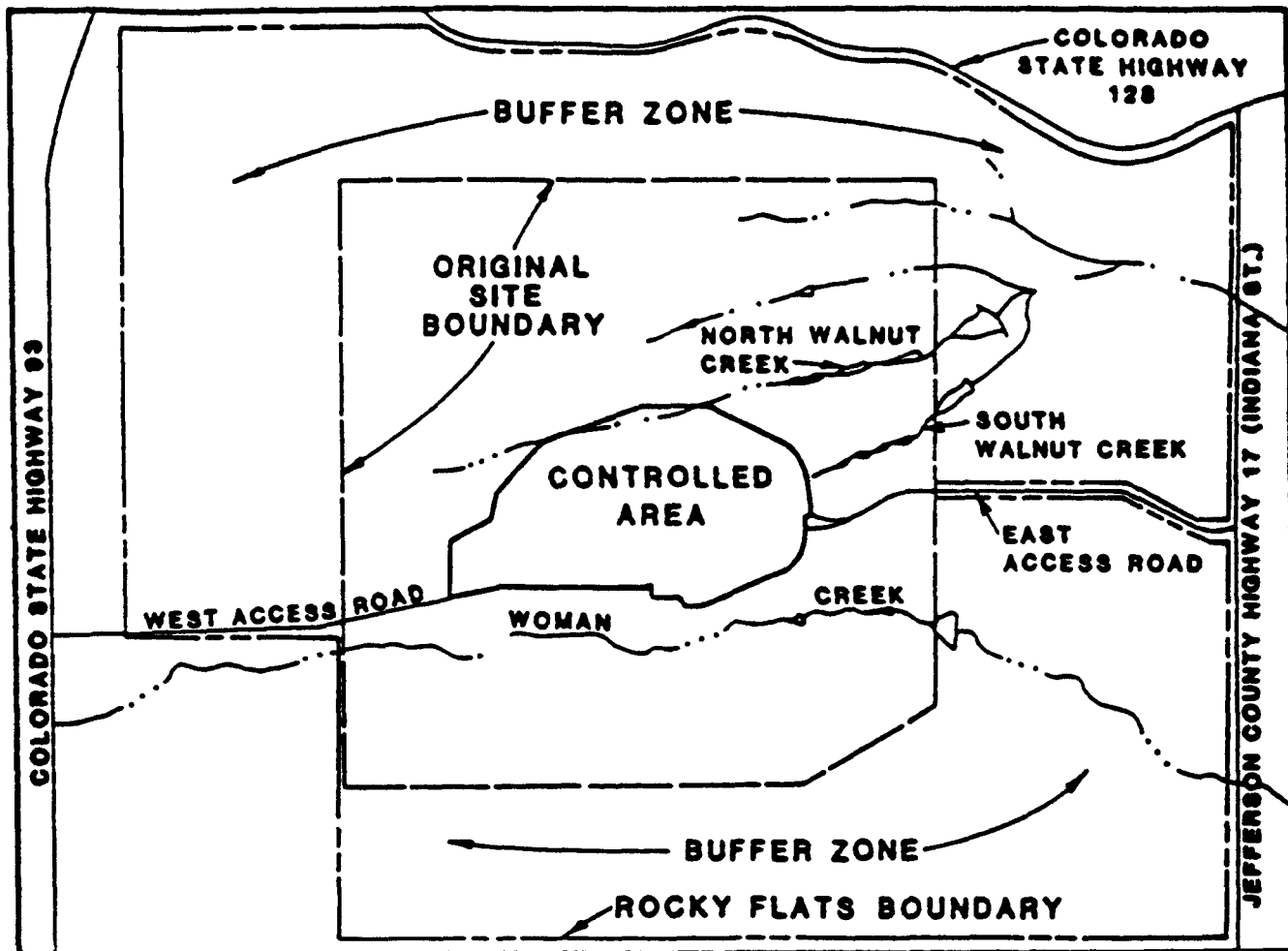
Mr. David P. Simonson, Manager  
Phone 303-966-2025

Rockwell International is the prime operating contractor for the Rocky Flats Plant (since June 1975) under the general direction of the U.S. Department of Energy (DOE), Rocky Flats Area Office, which in turn, reports to the U.S. Department of Energy, Albuquerque Operations Office. As a government-owned and contractor-operated facility, the Rocky Flats Plant comprises a portion of the nationwide nuclear weapons production complex.

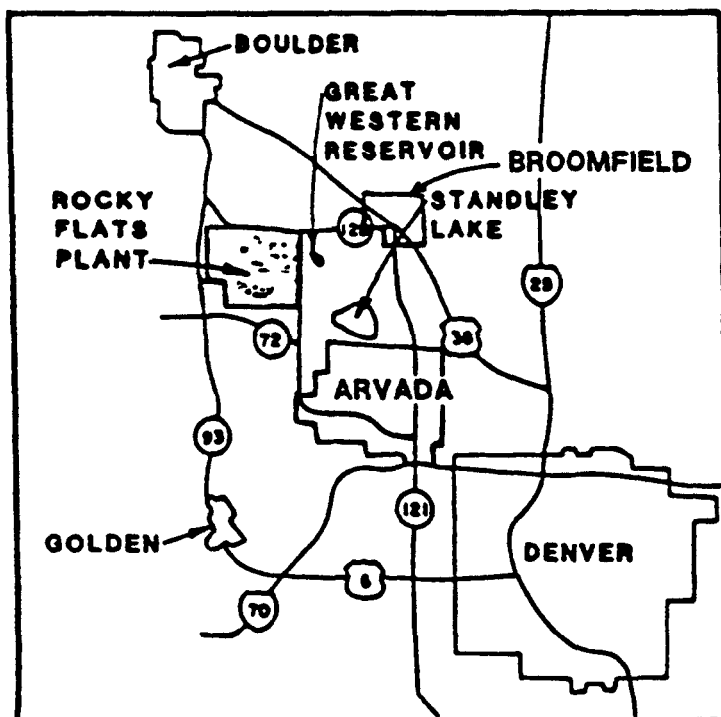
The primary Plant mission is to produce plutonium components for nuclear weapons. Plutonium, uranium, beryllium, and stainless steel parts are fabricated at the Plant and shipped off-site for final assembly. Additional activities include chemical processing to recover plutonium from scrap material, metallurgical research and development, machining, assembly, non-destructive testing, coatings, remote engineering, chemistry, and physics. Waste handling operations at the Rocky Flats Plant include storage, transport, treatment, and packaging of waste materials generated on-site. The waste forms that are handled include hazardous chemical waste, transuranic (TRU) waste, low level radioactive waste, non-hazardous chemical waste, and combinations thereof. Specifically, this Interim Status Closure Plan addresses containerized storage of TRU mixed waste.

**1.2 Interim Status Closure Plan Purpose**

The intent of this Interim Status Closure Plan is to provide for closure of Building 371, Room 3420, solid waste management unit (SWMU) No. 63 in compliance with Part 265 closure regulations. This plan addresses Colorado Hazardous Waste Regulations under CHWR 265, Subpart G, Closure and Post-Closure, Section 265, Subpart I, Use and Management of Containers, and equivalent Federal regulations.



APPROXIMATE SCALE 1"=3,300'



APPROXIMATE SCALE 1"=40,000'



VICINITY MAP



INTERIM STATUS CLOSURE PLAN  
ROCKY FLATS PLANT  
GOLDEN, COLORADO

FIGURE 1

## 2.0 FACILITY DESCRIPTION

### 2.1 Facility Location and Specifications

Building 371 is located in the northwest portion of the controlled area (Figure 2) Room 3420, which provides solid waste drum storage for transuranic mixed wastes, is located on the ground floor of Building 371. The area measures 50 feet 4 inches by 39 feet 6 inches. The floor, walls, and berms are constructed of concrete sealed with epoxy paint. The drums are protected from precipitation and runoff by the building. Room 3420 has concrete walls on two sides and four inch high concrete berms on two sides, protecting the drums from contact with other liquids which may be present within the building. The drums are stored on pallets. Figure 3 shows the floor plan of Room 3420. The illustrated drum layout is for example only and does not necessarily reflect the current configuration.

### 2.2 Facility Description

#### 2.2.1 Periods of Operation

Waste was first received in 1980, and was first stored over 90 days in the unit at that time. Unit 63 is slated for closure because Room 3420 is scheduled for new equipment in the Plutonium Recovery Modification Project renovations. Waste is currently being stored in Unit 63.

#### 2.2.2 Maximum Waste Inventory

The maximum waste storage capacity of Room 3420 in Building 371 is 950 steel drums of 55-gallons each, or 259 cubic yards of solid waste. The current maximum interim status storage capacity of Room 3420, however, is 668 steel drums of 55-gallons each, or 182 cubic yards of solid waste. This is a result of the Settlement and Compliance Order of July 1, 1989.

#### 2.2.3 Types of Waste Managed

Unit 63 is used to store transuranic (TRU) mixed solid wastes. Table 1 identifies the wastes approved for storage in Unit 63 along with corresponding Waste Form Numbers (WFNs) and Item Description Codes (IDCs). The data in Table 1 was obtained from the RCRA Part B Operating Permit Application for TRU Mixed Wastes at the Rocky Flats Plant (Rockwell International, 1989). The IDC identifies the physical and chemical form of the TRU material in process, and is used to account for radioactive materials throughout the Plant. The Solid Waste Management Unit Numbers that are listed in the IDC descriptions indicate the sources of the waste within the Rocky Flats Plant. TRU mixed wastes are defined as hazardous wastes exhibiting alpha activity greater than 100 nanocuries per gram and having radionuclides with atomic numbers higher than uranium.

Table 1 also shows the constituents of each of the waste forms acceptable for storage in Unit 63. The maximum concentrations shown were established by Rockwell personnel based on process knowledge. Many of the constituents shown are common to all the waste forms. A summary is presented below.

- |   |                 |
|---|-----------------|
| • 1,1,1-Trichloroethane                 | • Toluene       |
| • Carbon Tetrachloride                  | • Butyl Alcohol |
| • 1,1,2-Trichloro-1,2,2-Trifluoroethane | • Chloroform    |

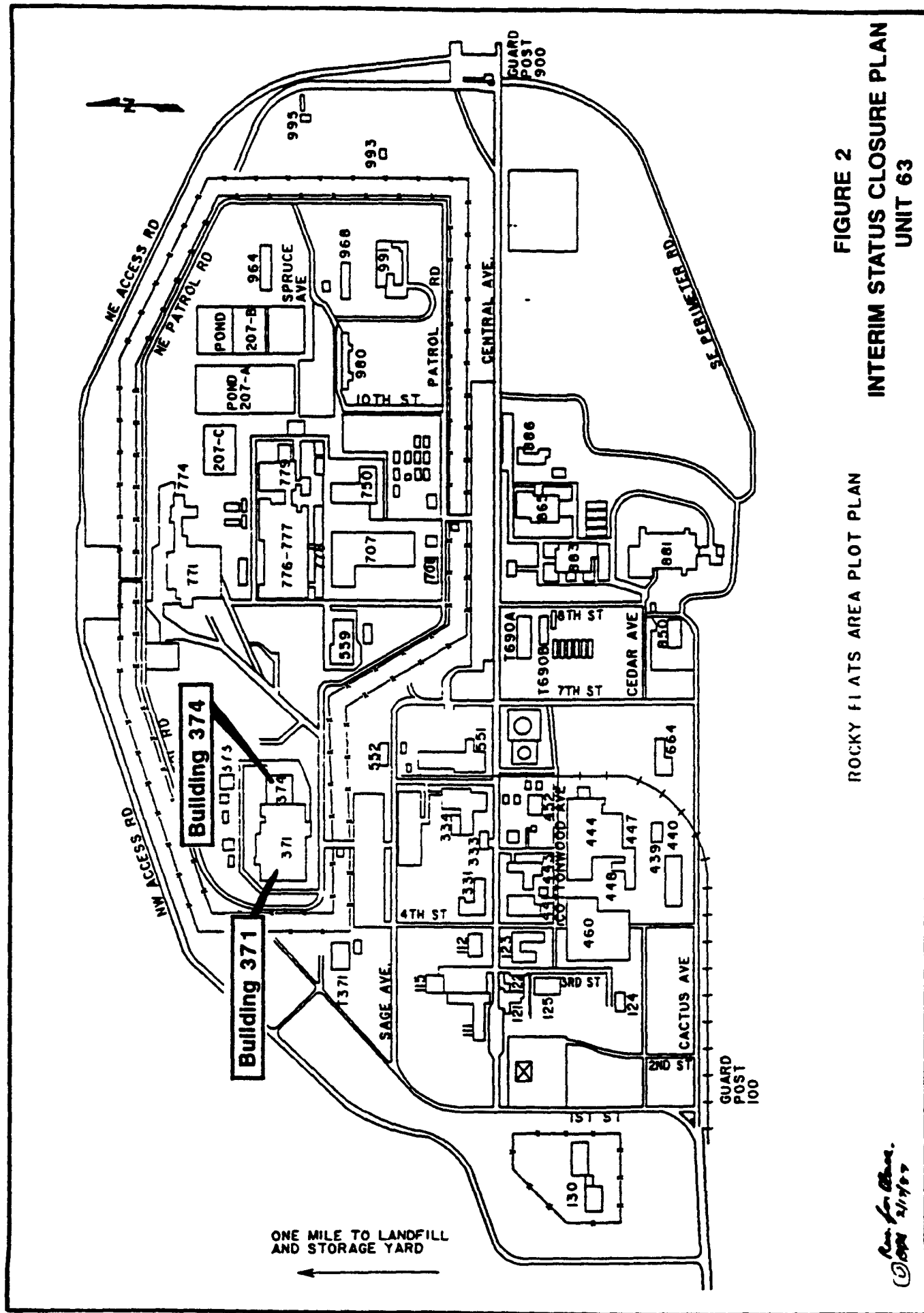
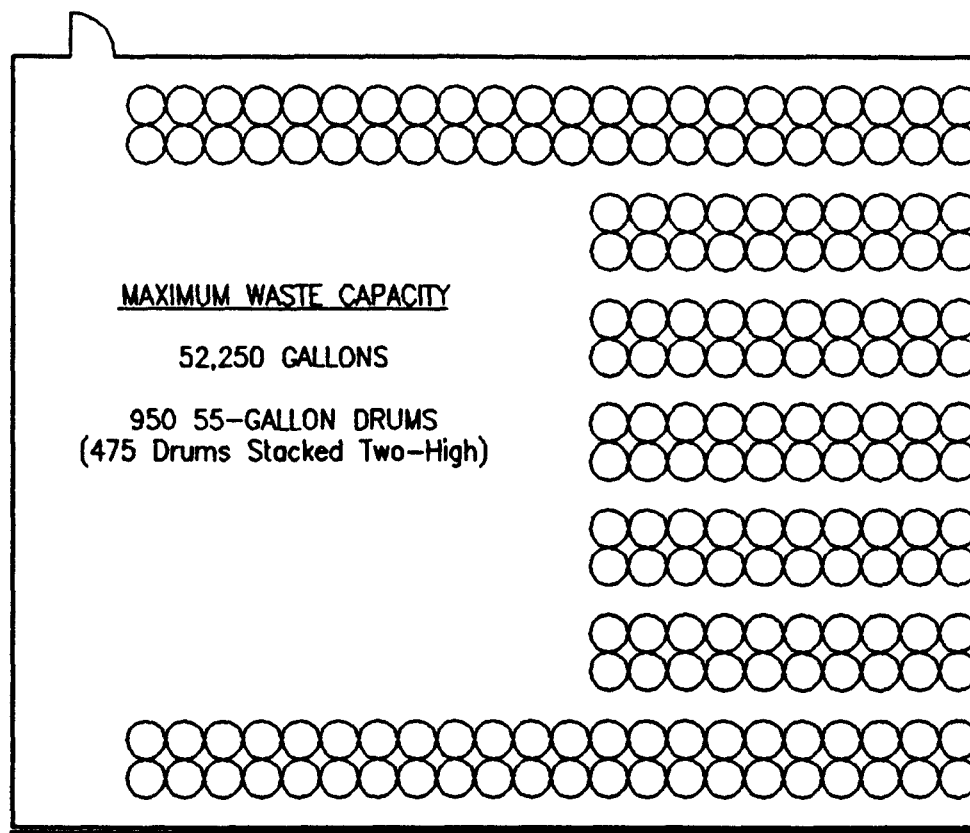


FIGURE 2  
INTERIM STATUS CLOSURE PLAN  
UNIT 63

ROCKY FLATS AREA PLOT PLAN

*Rev. for 2/1/79*  
© 1979 2/1/79



#### EXPLANATION

- EXTERIOR WALL
- CONCRETE WALL
- 55-GALLON DRUM



SCALE: 1" = 10'

0 5 10

#### NOTES

- 1 Minimum aisle space between drums was 1 foot, 6 inches
- 2 All walls and floors are constructed of concrete or cinder block and have painted or epoxy finished surfaces
- 3 A minimum 4 inch high berm was constructed at the doorway

FIGURE 3

FLOOR PLAN

UNIT 63, ROOM 3420, BUILDING 371

TABLE 1

TRU MIXED WASTE HAZARDOUS CONSTITUENTS ACCEPTABLE  
FOR STORAGE IN UNIT 63

Waste Form Number	Waste Form Name	(1) Hazardous Constituents	Maximum Concentration	Item Description Codes	
				Number	Name
TRU MIXED WASTE FORMS					
111	Solidified Aqueous Waste	1,1,1 Trichloroethane Carbon Tetrachloride 1,1,2 - Trichloro - 1,2,2 Trifluoroethane Methylene Chloride Methyl Alcohol Xylene Butyl Alcohol Cadmium Lead Ethyl Benzene Toluene	75 ppm 25 ppm 100 ppm 700 ppm 25 ppm 50 ppm 10 ppm 10 ppm 10 ppm 10 ppm 10 ppm	800 803 807	Solidified Sludge - Unit 55 Solidified Sludge - Unit 42 Solidified Bypass Sludge - Unit 42
112	Solidified Organics	1,1,1 Trichloroethane Carbon Tetrachloride 1,1,2 Trichloro 1,1,2 Trifluoroethane	15% 5% 5%	801	Solidified Organics - Unit 56
113	Solidified Laboratory Waste	1,1,1 Trichloroethane Carbon Tetrachloride Chloroform Cyclohexane Acetone Xylene Tributylphosphate Triethylphosphine Oxide Cadmium Lead	15% 5% 5% 5% 5% 5% 5% 10 ppm 10 ppm	802	Solidified Lab Waste - Unit 57

(1) Established by Rockwell staff based on process knowledge



TABLE 1 (cont.)

**TRU MIXED WASTE MAZARDOUS CONSTITUENTS ACCEPTABLE  
FOR STORAGE IN UNIT 63**

Waste Form Number	Waste Form Name	(1) Hazardous Constituents	Maximum Concentration	Item Description Codes	
				Number	Name
TRU MIXED WASTE FORMS (cont.)					
114	Solidified Process Solids	1,1,1 Trichloroethane	200 ppm	806	Solidified Process Solids - Unit 53
		Carbon Tetrachloride	25 ppm		
		1,1,2 - Trichloro - 1,2,2 Trifluoroethane	200 ppm		
		Methylene Chloride	100 ppm		
		Methyl Alcohol	15 ppm		
		Xylene	50 ppm		
		Butyl Alcohol	10 ppm		
Lead	400 ppm				
116	TRU Combustible Waste	1,1,1 Trichloroethane	2000 ppm	330-831* 336-832* 337-833*	Combustibles, Dry Combustibles, Wet Plastic and Non-Leaded Rubber
		Carbon Tetrachloride	750 ppm		
		1,1,2 - Trichloro -1,2,2 Trifluoroethane	1500 ppm		
		Methylene Chloride	750 ppm		
117	TRU Metal Waste	1,1,1 Trichloroethane	75 ppm	320 321 480 481 488	Heavy Metal (Ta, W, Pt, Pb) Lead Light Metal Light Metal, Leached Glove Box Parts with Lead
		Carbon Tetrachloride	10 ppm		
		1,1,2 - Trochloro - 1,2,2 Trifluoroethane	100 ppm		
		Methylene Chloride	700 ppm		
		Lead	100%		

(1) Established by Rockwell staff based on process knowledge

\* - Item Description Code numbers are reassigned when activity is determined to be below Economic Discard Level.

TABLE 1 (cont.)

TRU MIXED WASTE HAZARDOUS CONSTITUENTS ACCEPTABLE  
FOR STORAGE IN UNIT 63

Waste Form Number	Waste Form Name	(1) Hazardous Constituents	Maximum (1) Concentration	Item Description Codes	
				Number	Name
TRU MIXED WASTE FORMS (cont.)					
119	TRU Filter Waste	1,1,1 Trichloroethane Carbon Tetrachloride 1,1,2 - Trichloro - 1,2,2 Trifluoroethane	150 ppm	335	Absolute Dry Box Filters
			150 ppm	376	Ful-Flow Filters
			100 ppm	338	Insulation and Filter Media
				376	Cemented Insulation and Filter Media
			Methylene Chloride	50 ppm	490 491
122	TRU Inorganic Solid Waste	1,1,1 Trichloroethane Carbon Tetrachloride 1,1,2 - Trichloro - 1,2,2 Trifluoroethane Methylene Chloride	900 ppm	371	Firebrick
			100 ppm	374	Blacktop, Dirt, Concrete, and Sand
			8000 ppm	375	Oil Dri
			700 ppm		
123	TRU Leaded Rubber	Lead	60%	339	Leaded Rubber

- Methylene Chloride
- Methyl Alcohol
- Ethyl Benzene
- Xylene
- Cadmium
- Cyclohexane
- Acetone
- Tributylphosphate
- Trioctylphosphine oxide
- Lead

## 2.2.4 Waste Handling Description

Unit 63 provides storage for TRU mixed waste forms from a number of sources within the Rocky Flats Plant. Treatment of these wastes has not occurred in Unit 63. Drums are transported to Building 371 by truck and subsequently taken to Room 3420 by drum dolly or forklift. Figure 3 shows the floor plan of Unit 63.

Drums stored in Unit 63 are then moved to Building 664 for staging to be shipped off-site to an acceptable disposal facility. Drums are transported out of Building 371 by drum dolly or forklift and to Building 664 by truck.

## 2.2.5 Monitoring and Containment Systems

The floor, walls and berms of Room 3420 are constructed of concrete and sealed with epoxy paint. All steel drums are stored on pallets, which provide protection from accumulated liquids. Aisle space (minimum 1-foot 6-inches) is maintained to allow access for periodic container inspections and emergency equipment. These inspections are conducted weekly, and consist of visually assessing the structural integrity of the drums and checking for leaks and corrosion.

## 2.2.6 Releases

According to interviews of Rockwell operations and supervisory personnel, a release of waste from the drums stored in Room 3420 has not occurred.

# 3.0 INTERIM STATUS CLOSURE PLAN SUMMARY

## 3.1 Closure Activities

This interim status closure plan has been prepared to meet the performance standards of 6 CCR 1007-3, Section 265.111. The promulgated standards require a facility be closed in a manner that:

- Minimizes the need for further maintenance, and
- Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere.

### **3.2 Interim Status Closure Plan**

The progression of activities necessary to complete closure is as follows

- Removal of inventory and pallets from Room 3420
- Decontamination of surfaces in Room 3420
- Decontamination verification
- Certification of closure

It is presumed that decontamination of Room 3420 can be achieved. If decontamination is determined to be impracticable, then an amended closure plan will be submitted within 30 days of this unexpected event.

### **3.3 Closure Schedule**

This closure plan is being submitted at least 45 days prior to initiation of final closure of the unit. Once the plan is approved, the CDH and the EPA Regional Administrator will be notified of the intent to close Unit 63 45 days prior to beginning the closure. Decontamination of the unit will be accomplished within 90 days from the beginning of closure.

If the unit is shown to be sufficiently clean after one decontamination, closure will be certified 180 days after closure begins. If decontamination is not achieved at this point, an amended closure plan will be submitted within 30 days after this unexpected event.

### **3.4 Administration Of Interim Status Closure Plan**

The interim status closure plan for the Unit 63 Drum Storage Area will be maintained at the Rocky Flats Area Office, Building 115, US Department of Energy. The person responsible for storing and updating this copy of the closure plan is

Mr. David P. Simonson, Manager  
U.S. Department of Energy  
Rocky Flats Plant  
P.O. Box 928  
Golden, CO 80402  
Phone (303) 966-2025

### **4.0 REMOVAL OF HAZARDOUS WASTE INVENTORY**

The disposition of any TRU mixed waste from a unit undergoing closure will depend on the exact characteristics of the waste and the permitted treatment and disposal facilities available at commercial and DOE facilities. Disposition of these wastes will be at an acceptable facility available at the time of closure.

## **5.0 DECONTAMINATION**

### **5.1 Decontamination of Room 3420**

Removal of any hazardous waste residues remaining on the surfaces of Unit 63 will be accomplished with a wash and triple rinse. "SOLNI," or an equivalent cleaning solution, will be used in the wash step. SOLNI is effective in removing TRU mixed waste residues. The wash will be followed by the triple rinse procedure required by 40 CFR 261.7(b)(3) for decontamination of containers or container liners used to store hazardous materials which states

"A container or an inner liner removed from a container that has held an acute hazardous waste listed in Parts 261.31, 261.32, or 261.33(e) is empty if the container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate."

The water used for the triple rinse will be free of organics. Up to 700 gallons of solution may be generated by one wash and triple rinse of Room 3420. The rinsate will be collected by a vacuum unit and placed in 55-gallon drums or tank truck and be transferred to Building 374 for treatment.

### **5.2 Decontamination Performance Criteria**

Decontamination of Room 3420 must meet residual radioactive and hazardous constituent level performance criteria. For radioactivity, decontamination will be performed such that residual direct and removable alpha activity are below 1,000 disintegrations per minute (dpm) per 100 cm<sup>2</sup> and 20 dpm per 100 cm<sup>2</sup>, respectively. These are standard decontamination levels used at the Rocky Flats Plant as presented in the "Radiation Monitoring Procedures Manual" (Rockwell International, 1989). The direct count will be obtained with an air proportional alpha survey instrument and the removable level will be obtained by counting filter paper surface smears with a scintillation instrument.

With regard to any hazardous waste contamination that may be present in Room 3420, decontamination is achieved with the wash and triple rinse procedure described in Section 5.1. The triple rinse procedure is presumed, by RCRA regulations, to be an effective decontamination of containers that have stored hazardous materials which are listed in 40 CFR 261.31, 261.32, and 261.33. Parts 261.31, 261.32, or 261.33(e) include all hazardous constituents potentially stored in Unit 63 except for cadmium and lead. A surface wipe test for cadmium will therefore follow the wash and triple rinse for decontamination verification with respect to cadmium. Lead will not be used as an indicator parameter due to its possible presence in the paint on the surfaces of Room 3420. If the cadmium level is found to be at or below one microgram per smear, then Unit 63 will be considered to be free of cadmium contamination, and hence, free of hazardous waste contamination. This performance criteria is based on the Required Quantitation Limit (RQL) using EPA Contract Laboratory Program (CLP) procedures for smear preparation and cadmium analysis (EPA, 1987). Refer to Section 6 for the wipe sampling and analysis protocol.

### **5.3 Decontamination of Auxiliary Equipment**

The pallets used for drum storage will be decontaminated at a designated washdown area in Room 3420. A SOLNI wash followed by a triple rinse will be used as described in Section 5.1. Rinsate will be collected in approved containers and will be treated on-site at Building 374.

#### **5.4 Decontamination of Equipment Used During Closure**

The equipment employed during Unit 63 decontamination activities will be decontaminated. This equipment includes, but is not limited to, a vacuum unit, wash applicator, tank truck, and drums. A SOLNI wash followed by a triple rinse will be used as described in Section 5.1. Rinsate will be collected in approved containers and will be treated on-site at Building 374.

#### **5.5 Contaminated Soils**

Room 3420 is located two floors above the sub-basement, which rests on the ground. This location, together with the absence of any releases, eliminates consideration of soil contamination.

#### **5.6 Removal of Hazardous Waste Residues**

At least 700 gallons of waste may be generated by decontamination processes. The waste will be collected and placed in 55-gallon drums or a tank truck. The effluent contained in the drums or tank truck will be transferred to Building 374 for treatment.

### **6.0 DECONTAMINATION VERIFICATION**

#### **6.1 Sampling Procedures**

Sampling for direct and removable radiation will be performed according to Rockwell standard sampling procedures. These procedures are outlined in the "Radiological Monitoring Procedure Manual" (Rockwell International, 1989). Total alpha activity levels of the unit will be measured with an air-proportional-type alpha survey meter at ten random locations within the unit. Surface smears will be taken at these ten locations for a measure of removable alpha activity.

Ten random surface smears, separate from those collected for removable alpha activity, will be obtained and analyzed for cadmium. A piece of filter paper, one inch in diameter, will be used to wipe a 10 cm x 10 cm area.

#### **6.2 Analytical Methods**

The procedures and limits that will be used in evaluating the success of radiological decontamination efforts are described in the Rockwell "Radiological Procedures Manual". The decontamination performance criteria for direct and removable alpha activity are 1,000 disintegrations per minute (dpm) per 100 cm<sup>2</sup> and 20 dpm per 100 cm<sup>2</sup>, respectively. These are standard decontamination levels used at the Rocky Flats Plant as presented in the "Radiation Monitoring Procedures Manual". The direct count will be obtained with an air proportional alpha survey instrument and the removable level will be obtained by counting filter paper surface smears with a scintillation instrument.

The surface smears, along with a sample of the blank filter paper, will be forwarded to an EPA Contract Laboratory for analysis. The smears will be prepared for analysis according to soil/sediment sample digestion procedures (EPA, 1987). Total micrograms of cadmium will be determined by inductively coupled plasma (ICP) methodology. The cadmium detection limit using this procedure is approximately one microgram per smear.

## **7.0 CLOSURE SCHEDULE**

The CDH and the EPA Regional Administrator will be notified of the intent to close Unit 63, 45 days prior to beginning the closure. Decontamination of the unit will be accomplished within 90 days from the beginning of closure.

If the unit is shown to be sufficiently clean after one decontamination, closure will be certified 180 days after closure begins (Figure 4). If testing of the surface indicates contamination is still present above the performance standards, then an amended closure plan will be submitted within 30 days of this unexpected event.

## **8.0 CLOSURE COST AND FINANCIAL ASSURANCE**

State and Federal government facilities are exempt from the financial requirements imposed by Subpart H of 6 CCR 1007-3, Section 265.140(c). Because the Rocky Flats Plant is a federally-owned facility, no cost estimates or financial assurance documentation is required.

## **9.0 SITE ACCESS AND SECURITY**

Access to the work area will be limited to authorized personnel only. Exit from the working area will be through a clean, restricted area in the decontamination area. Existing security measures at the Rocky Flats Plant meet the requirements of 6 CCR 1007-3, Section 265.14. These include:

- A three-strand barbed-wire cattle fence surrounding the facility posted to identify the land as a government reservation/restricted area,
- A fence and armed guards posted 24 hours daily at two gates to the controlled area of the facility, and
- Surveillance by security cameras 24 hours daily.

Existing fences and gates are operated and maintained by DOE. Maintenance requirements will be performed by DOE regardless of closure activities at the site.

## **10.0 HEALTH AND SAFETY**

A site-specific Health and Safety Plan covering decontamination and closure of the site will be submitted to the CDH two months before closure activities begin. The plan will comply with all Occupational Safety and Health Administration (OSHA), CDH, EPA and DOE requirements.

## **11.0 POST-CLOSURE MONITORING**

The implementation of unit-specific post-closure monitoring is not expected to be necessary due to the contained nature of the drum storage area, SWMU 63.

## **12.0 CLOSURE CERTIFICATION**

After completion of closure, the owner (US Department of Energy) or operator (Rockwell International) and an independent certified registered engineer will submit certification of closure, based upon compliance with the closure plan, to the CDH and the EPA Regional Administrator.

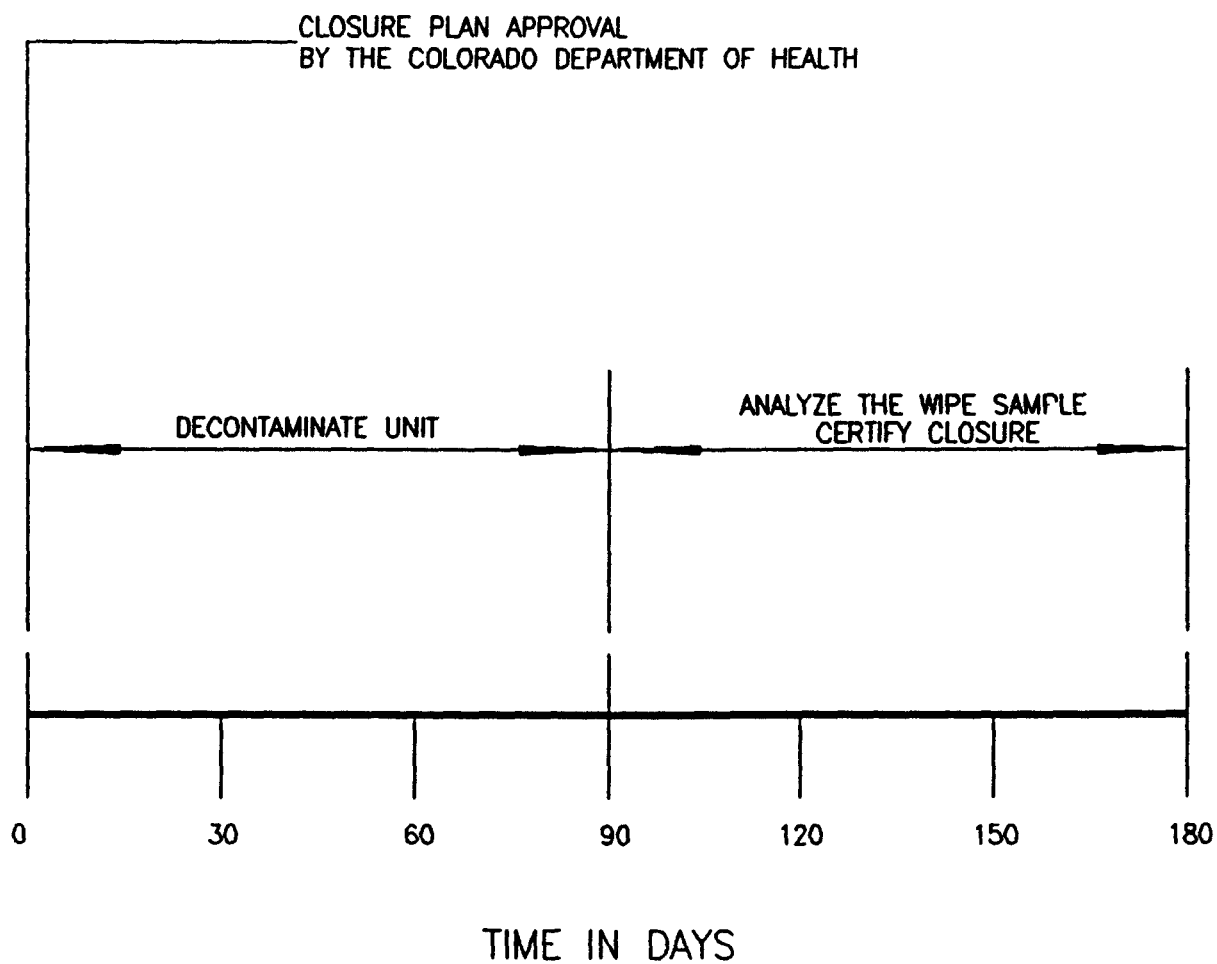


FIGURE 4  
SCHEDULE OF CLOSURE ACTIVITIES  
UNIT 63



The independent registered professional engineer will periodically review the closure operations in enough detail to assure final certification of closure. The final certification of closure will state that the closure procedures and standards have been carried out as described in the approved closure plan. In order to certify the performance and completion of closure activities, the independent registered professional engineer will review test results and inspect the site to verify the closure plan was carried out as approved. Both the operator and the independent registered professional engineer will submit a written document to the CDH and the EPA Regional Administrator to certify closure activities were conducted in accordance with the approved closure plan.

### **13.0 REFERENCES**

Rockwell International Corporation. 1979. Response to a Contamination Release HS-RM-53. Radiation Monitoring. October 10, 1979.

Rockwell International Corporation. 1988. Resource Conservation and Recovery Act Part B - Operating Permit Application. Rocky Flats Plant Transuranic (TRU) Mixed Wastes Volumes I through V. U.S. Department of Energy, Golden, Colorado. July 1, 1989.

Rockwell International Corporation. 1989a. Performance of Surface Contamination Surveys. Radiological Monitoring Procedure Manual (RMPM) 31. Health, Safety, and Environment. January 13, 1989.

U.S. Environmental Protection Agency. 1987. Contract Laboratory Program Statement of Work for Inorganics Analysis, Multi-media, Multi-concentration, July 1987.